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PBC-003-1013014 Seat No. _____

B. Sc. (Sem. V) (CBCS) Examination

November / December - 2018

BT - 301 : Metabolisms of Biomolecules

Faculty Code : 003

Subject Code : 1013014

Time : $2\frac{1}{2}$ Hours] [Total Marks : **70**

1 (a) Answer the Questions : (One Mark Each) **4**

(1) _____ are not consumed in the reactions they catalyse.

(2) The catalytic active site of enzyme is called _____.

(3) The enzyme having low affinity for the substrate will have _____ Km.

(4) The enzyme that catalyses the change in the location of the functional group from one position to another in the compound is called _____.

(b) Answer the Question - Any **One** out of Two : **2**

(1) Explain Acid Base catalysis.

(2) Explain lock and key model.

(c) Answer the Question - Any **One** out of Two : **3**

(1) Write the nomenclature and classification of enzyme.

(2) What is proximity effect in enzyme catalytic reaction ?

(d) Answer the Question - Any **One** out of Two : **5**

(1) Derive the equation for linear transformation of Michalis menton equation.

(2) Define biocatalyst and chemical catalyst and enlist difference between them.

2 (a) Answer the Questions : (One Mark Each) **4**

(1) In what form does the product of glycolysis enter the TCA cycle?

(2) Acetyl-CoA is an ideal substrate for gluconeogenesis. True or False

(3) During glycolysis electron removed from glucose are passed to _____.

(4) In electron transport chain electron ultimately passes to _____.

(b) Answer the Question - Any **One** out of Two : **2**

(1) Why TCA is a amphibolic pathway ?

(2) What are the components of ETC ?

(c) Answer the Question - Any **One** out of Two : **3**

(1) Write non reversible steps of gluconeogenesis.

(2) Write a note on PDH complex.

(d) Answer the Question - Any **One** out of Two : **5**

(1) Explain in detail the phenomenon of β – oxidation of odd chain fatty acid.

(2) Reactions of pentose phosphate pathway.

3 (a) Answer the Questions : (One Mark Each) **4**

(1) Which is the common nitrogen acceptor for all reactions involving transaminase?

(2) Oxidative deamination is the conversion of an amino acid to _____ + _____.

(3) Site of urea cycle is _____.

(4) The product of light reaction of photosynthesis is _____.

(b) Answer the Question - Any **One** out of Two : **2**

(1) Name two photosynthetic bacteria.

(2) Explain transmination with example.

(c) Answer the Question - Any **One** out of Two : **3**

(1) Write a short note on urea cycle.

(2) How carbon dioxide is fixed during dark reaction?

(d) Answer the Question - Any **One** out of Two : **5**

(1) Cyclic and non-cyclic photophosphorylation.

(2) Write a short note on decarboxylation.

4 (a) Answer the Question : (One Mark Each) **4**

(1) Hormones are _____ in nature.

(2) Precursor of indole acetic acid is _____.

(3) Islets of lengerhans are found in _____.

(4) Hormonal control is always _____.

(b) Answer the Question - Any **One** out of Two : **2**

(1) Enlist types of plant hormones.

(2) Enlist types of animal hormones.

(c) Answer the Question - Any **One** out of Two : **3**

(1) Enlist difference between endocrine and exocrine.

(2) Give short note on types of plant hormon.

(d) Answer the Question - Any **One** out of Two : **5**

(1) Give short note on hormonal imbalance in human.

(2) Write a short note on function of plant and animal hormone.

5 (a) Answer the Questions : (One Mark Each) **4**

(1) Who proposed fluid mosaic model of cell membrane?

(2) Which methods of membrane transport don't require protein channels or carriers ?

(3) The membrane transport mechanism used when an amoeba engulfs a bacterial cell is called _____.

(4) Cyclin-dependent protein kinase activity is fluctuates during cell cycle. True or false

(b) Answer the Question - Any **One** out of Two : **2**

(1) What is G protein?

(2) What is domain and micro domain of membrane?

(c) Answer the Question - Any **One** out of Two : **3**

(1) Explain the mechanism of transportation.

(2) Explain the process of signal transduction.

(d) Answer the Question - Any **One** out of Two : **5**

(1) Explain the role of hormones as messenger in regulation of cellular metabolisms.

(2) Explain active transport mechanisms with example.
